

## Three New Species of Avian Dilepidid Cestodes from Oita Prefecture, Japan<sup>1</sup>

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**ABSTRACT**—Three new dilepidid cestodes were recorded from wild birds collected at Oita Prefecture, from December 1985 to March 1986. *Choanotaenia (Cholodkovskya) cylindrocephala* sp. n. from *Microscelis amaurotis amaurotis* is related to *C. (Cholodkovskya) unicoloronata* (Fuhrmann, 1908) Matevosian, 1953 and *C. (Cholodkovskya) serivastavai* Mukherjee, 1965; but it differs from the former in the size of strobila, the shape of rostellar hooks and the form of cirrus, and from the latter in the size of rostellum, the length of rostellar hooks and the size of ovary. *Kowalewskiella grandighamata* sp. n. from *Turdus aureus aureus* differs from any of the five known species of the genus in the form, the length and the row of rostellar hooks, and the number of testes. *Paruterina oitana* sp. n. from *Otus scops japonicus* is related to but differs from *P. rauschi* Freeman, 1957, in the size of scolex and sucker, the length of rostellar hooks and the number of testes.

Since 1974, the authors have been examining cestodes parasitic on various wild animals collected in the Kyushu Districts, Japan. The present paper deals with cestodes obtained from wild birds at Oita Prefecture during the period from December 1985 to March 1986.

### MATERIALS AND METHODS

All cestode specimens were obtained from the guts of the hosts and fixed in Carnoy's fluid for a few days. After being soaked in 45% acetic acid for about 1 hr for expanding, they were stored in 70% alcohol, and then stained with Delafield's hematoxylin, cleared in xylene and mounted in Canada balsam. Measurements are given in millimeters.

### RESULTS

*Choanotaenia (Cholodkovskya) cylindrocephala*  
sp. n.

(Figs. 1-4)

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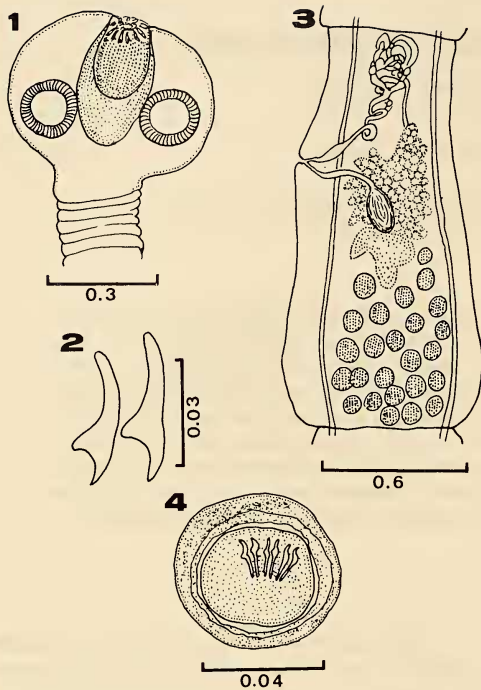
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A single specimen of this cestode was obtained from one brown-eared bulbul, *Microscelis amaurotis amaurotis*, collected at Yokoe-chô, Oita City, Oita Prefecture, on December 29, 1985.

*Description:* Small-sized dilepidid, worm length 38; maximum width 0.83, consisting of about 48 proglottids. Anterior proglottids much broader than long, but gradually proportion reversed, posterior ones being much longer than broad. Scolex nearly spherical, 0.42 long and 0.56 wide at level of suckers, distinctly set off from neck. Suckers round, 0.245 in diameter. Rostellum pyriform, 0.301 by 0.140, armed with two alternate rows of 20 hooks. Hooks of two rows similar in shape, but attached at different levels. Hooks of anterior row larger, measuring 0.042 long; those of posterior row 0.039 long. Handle of hooks strong; guard small, bluntly round at its end, shorter than blade; blade sharp at its end. Rostellar sac well-developed, extending almost to posterior margins of suckers, measuring 0.371 long and 0.182 wide.

Genital pore irregularly alternate, located a little anterior to middle of proglottid margins. Testes oval or spherical, numbering about 22-29, postovarian, lying in posterior half of proglottid. Cirrus sac thin-walled, measuring 0.084-0.091



FIGS. 1-4. *Choanotaenia (Cholodkovskya) cylindrocephala* sp. n. 1: Scolex. 2: Rostellar hooks. 3: Mature proglottid. 4: Egg. Scale in mm.

long and 0.014 wide. Cirrus armed with minute spines. Ovary well-developed, bilobed, pretesticular, lying in middle of anterior half of proglottid. Poral lobe considerably smaller than aporal. Ovary bounded by longitudinal excretory canals, measuring 0.203–0.210 across. Vagina opening just posterior to genital atrium and gradually expanding into a seminal receptacle measuring 0.070–0.091 by 0.043–0.056. Vitelline gland trilobate, measuring 0.084–0.070., just posterior to ovary.

Eggs spherical, 0.046–0.049 by 0.039–0.042, surrounded by four envelopes; outermost chorion thin, with smooth surface. Onchospheres spherical, 0.032–0.035 in diameter; embryonic hooks 0.014 long.

*Host: Microscelis amaurotis amaurotis.*

*Site of infection:* Small intestine.

*Locality and date:* Yokoe-chô, Oita City, Oita Prefecture; December 29, 1985.

*Type specimen:* Holotype: NSU Lab. Coll. No. 8601.

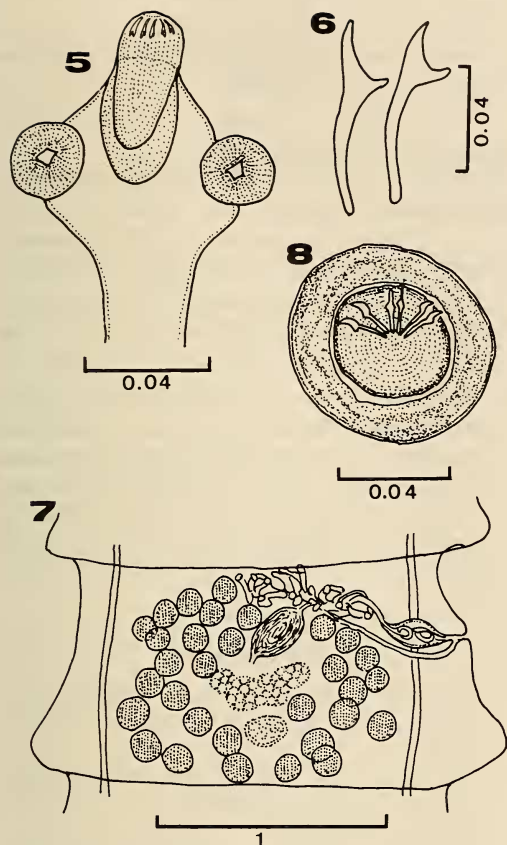
*Remarks:* Species of the genus *Choanotaenia* were divided into two groups by Wardle and McLeods (1952) [1]: one in which the rostellum has a single crown of rostellar hooks and the other in which the rostellum has a double crown of rostellar hooks. Matevosian (1954) [2] have divided the genus *Choanotaenia* Railliet, 1896, into two subgenera: *Choanotaenia*, *Choanotaenia* with one row of hooks on the scolex; *Cholodkovskya*, *Choanotaenia* with two rows of hooks. The present authors hold Matevosian's opinion. Each group comprises a large number of known species. So far as known to the authors, about 33 species of *C.* (*Cholodkovskya*) have been recorded from birds. Of these, the present new species most closely resembles *C.* (*Cholodkovskya*) *unicoronata* (Fuhrmann, 1908) Matevosian, 1954, from *Turdus merules* [3] in the number and length of rostellar hooks, and the number of testes; and *C.* (*Cholodkovskya*) *srivastavai* Mukherjee, 1965 from *Turdoides somervillei* [4] in the number of rostellar hooks and testes. However, the present new species differs from the former in the smaller size of the worm (37.1 vs. 220), the shape of rostellar hooks (handle bluntly round at its end vs. pointed) and the form of cirrus (armed vs. unarmed); and from the latter in the larger size of rostellum (0.301 by 0.140 vs. 0.13 by 0.10), the longer rostellar hooks (0.039–0.042 vs. 0.01–0.02) and the larger size of ovary (0.203–0.210 by 0.154–0.161 vs. 0.05–0.06 by 0.03–0.04).

*Kowalewskiella grandihamata* sp. n.

(Figs. 4–8)

Five specimens of the present form were obtained from one White's ground-thrush, *Turdus aureus aureus*, collected at Yokoe-chô, Oita City, Oita Prefecture, on January 23, 1986.

*Description:* Medium-sized dilepidid; strobila length 80–110; maximum width 2–2.5. Metamerism distinct, craspedote; margins serrate. Proglottid wider than long. Scolex 0.45–0.64 long and 0.63–0.73 wide, set off from neck. Suckers round, unarmed, 0.21–0.23 in diameter. Rostellum 0.28–0.38 long and 0.17–0.24 wide, armed with a double row of 28 hooks. Hooks of two rows



FIGS. 2–8 *Kowalewskiella grandihamata* sp. n. 5: Scolex. 6: Rostellar hooks. 7: Mature proglottid. 8: Egg. Scale in mm.

similar in shape, but attached at different levels. Hooks of anterior row larger, measuring 0.073; those of posterior row 0.068 long. Handle of hooks long, guard small, bluntly round at its end, shorter than blade; blade sharp at its end. Rostellar sac well-developed, 0.27–0.47 long and 0.17–0.27 wide. Neck 0.5 long and 0.2 wide.

Genital pore unilateral, located a little anterior to middle of proglottid margins. Testes 27–30 in number, encircling female organs, measuring 0.042–0.056 in diameter. Vas deferens much coiled, located in anterior poral third of proglottid, and joining to posterior edge of cirrus sac. Cirrus sac 0.070–0.091 long and 0.042 wide, extending behind lateral excretory canal. Vagina opening into genital atrium, extending to median field, parallel to cirrus sac, then enlarging, forming a

seminal receptacle measuring 0.035–0.042 by 0.084. Ovary transversely elongated, measuring 0.105 across. Vitelline gland lobed structure, 0.021–0.035 by 0.014–0.021, situated just posterior to ovary. Eggs spherical 0.060–0.063 by 0.067–0.074, surrounded by four envelopes; outermost chorion thin, with smooth surface. Onchospheres spherical, 0.093 by 0.042; embryonic hooks 0.018 long.

*Host:* *Trudus aureus aureus*.

*Site of infection:* Small intestine.

*Locality and date:* Yokoe-chô, Oita City, Oita Prefecture; January 23, 1986.

*Type specimen:* Holotype: NSU Lab. Coll. No. 8902; Paratypes: No. 8603.

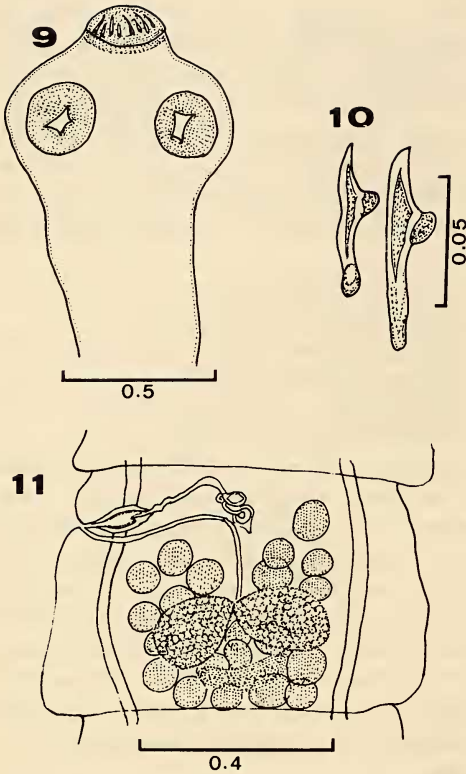
*Remarks:* The number of the species belonging to the genus *Kowalewskiella* Baczynska, 1914, amounts to five: *K. longiannulata* Baczynska, 1914 [5], *K. cingulifera* (Krabbe, 1869) Spassky, 1957 [6], *K. glareolae* (Burt, 1940) Lopez-Neyra, 1952 [7] and *K. stagnatilis* (Burt, 1940) Lopez-Neyra, 1952 [7] and *K. hypoleucia* (Singh, 1952) Saxena, 1971 [8]. The present new species is distinct from any of the above-mentioned species in the form, length and row of rostellar hooks, and number of testes.

*Paruterina oitana* sp. n.  
(Figs. 9–11)

One Japanese scop owl, *Otus scops japonicus*, collected at Asahi-chô, Beppu City, Oita Prefecture, on March 10, 1986, was found infected with six specimens of the present form. They were fully mature, but not gravid.

*Description:* Small-sized dilepidid; worm length 6–8; maximum width 0.5–0.7. Metamerism distinct, margins serrate. Mature proglottids wider than long. Scolex well-developed, 0.526 long and 0.650 wide, distinctly set off from neck. Rostellum 0.166 long and 0.221 wide when extended, armed with a double row of 44–45 hooks. Hooks of two rows similar in shape, but attached at different levels. Hooks of anterior row larger, measuring 0.070; those of posterior row 0.049 long. Handle of hooks long; guard small, round at its end, remarkably shorter than blade; blade sharp at its end. Suckers unarmed, 0.180–0.193 in diameter. Neck slender, 2.8 long and 0.3 wide.





FIGS. 9-11 *Paruterina oitana* sp. n. 9: Scolex. 10: Rostellar hooks. 11: Mature proglottid. Scale in mm.

Genital pore irregularly alternating, located anterior to middle of proglottid margins. Cirrus sac pyriform, 0.091-0.112 long and 0.049 wide, extending beyond longitudinal excretory canals towards anterior border of proglottid. Vas deferens coiled, narrow, in anterior field of proglottid. Testes mostly ovoid, 22-23 per proglottid, arranged behind and in both anterolateral sides of female genitalia. Vagina posterior to cirrus sac, terminating in elongated seminal receptacle near ovarian isthmus. Ovary bilobed with each lobe measuring 0.063-0.091 long and 0.035 wide, located posterior half of proglottid. Vitellin gland 0.063-0.011 by 0.035, immediately post-ovarian.

*Host: Otus scops japonicus.*

*Site of infection:* Small intestine.

*Locality and date:* Asahi-chô, Beppu City, Oita Prefecture; March 10, 1986.

*Type specimen:* Holotype: NSU Lab. Coll. No. 8604; Paratypes: No. 8605.

*Remarks:* About 16 species of the genus *Paruterina* Fuhrmann, 1906 have been recorded from wild birds. Of these, two species; *P. otidis* Baczynska, 1914 [5] and *P. rauschi* Freeman, 1957 [9], were described from the Strigiformes. The present new species most closely resembles *P. rauschi* in the number of rostellar hooks and the position of genital pores. However, it differs from that species in the following characters: (1) larger scolex (0.526 by 0.650 vs. 0.150 by 0.225); (2) larger suckers (0.193 by 0.180 vs. 0.081-0.094 by 0.076-0.089); (3) longer rostellar hooks (0.049-0.070 vs. 0.030-0.042); and fewer number of testes (22-23 vs. 27-32).

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